

Social Role Valorization and Supported Employment:
their application in the institutional setting and
effects on the development in adaptive behaviour
of people with moderate to severe intellectual disability.

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I certify that this thesis contains no material which has been accepted for the award of any other degree or graduate diploma in any other university, and that to the best of my knowledge and belief this thesis contains no copy or paraphrase of material previously published or written by another person, except where due reference is made in the text of the thesis.

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**Social Role Valorization for
People with Intellectual Disability
through Employment Opportunities**

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Abstract

Intellectual disability is discussed in terms of both characteristics inherent in the individual and a state determined by the interaction of the individual with their environment. Criticisms of psychometric and etiological categorisation are given. It is proposed that the process of habilitation be best served by a focus on the development of the person's skills of adaptive behaviour. Furthermore, the principles of *Social Role Valorization* (S.R.V.) as they are applied to the development of supported employment options are proposed as a means of remediating the effects of intellectual disability, by fostering the development of adaptive skills. It is argued that the principles of S.R.V. can be effectively applied in the development of institutional services as well as in community-based settings, and that they are applicable to the development of services for people with even severe degrees of intellectual disability.

DEFINING INTELLECTUAL DISABILITY

Intellectual disability may be considered in terms of either an inherent characteristic of the individual (Ogler, Balla & Hodapp, 1984) or a product of the abilities of the individual as they interact with their environment (Barnet, 1986). Each perspective bears its own implications for determining appropriate assessment methodologies, intervention strategies and the long-term prospects of people with intellectual disability.

Individual Specific Definitions

Zigler et al (1984) conceptualises intellectual disability as a stable characteristic of the individual reflected in impaired or inefficient cognitive processing. They consider that it is best discussed in terms of a psychometric intelligence quotient (IQ) of the type devised by Binet and Terman (1980) or Weschler (1950). They further suggest that it is appropriate to classify intellectual disability in terms of its aetiology, or its organic cause.

Binet (Binet, & Terman, 1980) and Thorndike (1920) define intelligence as a general adaptive capacity; an ability to deal with the problems of life and the power of developing appropriate responses to issues which confront the individual. Boring (1957) views intelligence from an operational perspective: that is, a capacity to work at specific tasks, elements of which are to be reflected in IQ tests. It is Spearman (1927)

who develops the notion of the 'g' or general intelligence; a single ability, the components of which are reflected in many functions and specific abilities.

When discussing intellectual disability in terms of IQ, Zigler and his colleagues argue that such assessment has undergone 75 years of development and exhibits more correlation than any other measure (Kohlberg & Zigler, 1967). Further, it is argued that IQ has strong predictive powers across a wide variety of situations (Mischel, 1968) and that the consistency of IQ across the life cycle points to the strong predictive value of initial IQ assessments with respect to intellectual activities of the individual in later life (Hunt, 1976).

While traditional IQ assessment may be useful in some situations, it is questionable as to its appropriate application to the definition of intellectual disability. Originally developed as a means of predicting academic achievement, it does not appear sufficient for the determination of broader social competencies. Ayer (1984) discusses the diversity of abilities exhibited by children considered as equivalent in terms of IQ ratings. He observes *"any scale which reduces a child's ability to a single score is by definition crude and misleading"* (p.82).

One further issue regarding the application of traditional psychometric IQ is the arbitrary nature by which labels and functional descriptions are tied

to various scores. Here it is worth noting the differences between the descriptors applied to the American Association for Mental Deficiency (AAMD) IQ and the World Health Organisation (WHO) IQ. Also, while intellectual disability is usually defined in terms of scores two (2) standard deviations below the mean, it has been proposed that this be reduced to one (1) standard deviation (Herber, 1961). Maintaining a 'cut-off' at IQ 70 would appear to be more about limiting access to finite resources, such as educational, residential and employment support services, than the recognition of any specific clinical needs of individuals.

A more useful means of discussing IQ as it is applied to intellectual disability is in terms of an information processing model (Sternberg, 1986). Such models tend to ask questions beyond individual differences and to develop an understanding of what processes lie at the bases of these differences. They do not simply ask how well, how fast or how accurate a response may be, but why the results emerge as they do. The focus is not so much on performance as on the processes at work.

The information processing model yields five possible components of intelligence: encoding ability, inference and the development of relationships, mapping and the assessment as to the overall fit of new information with pre-existing knowledge, the application and the adaptation of misfitting information, and response time. While this

approach does address the question of the critical constituents of functional intelligence, unlike traditional IQ, it has not as yet been developed to such a degree as to discriminate well between individuals.

The attenuated mental capacity or intellectual power of the individual will remain a vital concern (Clauser, 1972). For this reason, IQ emerges as a useful component in a broader process of assessment and therefore, despite its limitations, should not be discarded. As Robinson, (1965) states *'IQ is an index of intellectual development which communicates the greatest amount of information about the intellectual status of an individual in the least amount of time'* (p .)

In addition to defining intellectual disability in terms of IQ, Zigler et al (1984) propose an etiological classificatory system in terms of *familially retarded* and *organically retarded*. They propose that the first group represent 75% of the population with disabilities. This condition may be accounted for by way of four factors: psycho-social disadvantage, interaction between genetic and environmental factors, sub-clinical organic damage which presently defy diagnostic techniques and a state which is not so much a pathology as a natural distribution within the population. The second group, the organically retarded, is proposed to have emerged as a result of prenatal genetic mutation, inherited factors, or postnatal damage such as anoxia or lead poisoning, etc. While it has been argued that an etiological approach may be usefully applied in

research into possible preventative measures, it is by no means an easily mobilised approach (Maggs, 1974). Intellectual disability is not a specific state or condition. It consists of a variety of syndromes of which some 200 causes have so far been identified (Hamilton, 1970). Further, some 85% of those with intellectual disability do not display detectable physiological signs and 50% do not display obvious etiological causes (Jervis, 1968).

Environmental Interactive Definitions.

Given the limitations of psychometric and etiological classificatory definitions, intellectual disability may be discussed in terms of social adaptation (Barnet, 1986). Such an approach has a long history in terms of the observation and classification of intellectual disability. As early as 1325 the notion of the *idiot* or *natural fool* was thought to involve an impaired capacity to assume social responsibility (Maggs, 1974).

Threadgold (1937) spoke of a state of incomplete mental development to a degree that the individual was incapable of adapting himself to the normal environment of his fellows in such a way as to make existence, independently of supervision, control or external support impossible.

Bijou (1965) discusses the limitations of the individuals' behavioural repertoire. The case advanced by Barnet (1986) is that intellectual disability can be best understood as "*a state determined by way of the interaction between the individual and the environment* " (p.112).

While agreeing with Zigler et al (1984) that the fundamental property of intellectual disability is cognitive inefficiency, Barnet argues that this necessarily presupposes a state of efficiency, which is culturally defined. Barnet cites cross-cultural studies that suggest that the cultural definition of intellectual disability is subject to great variation. Intellectual disability is not therefore to be considered as an inherent characteristic of the individual, which is captured by IQ. Rather, it is reflected in the quality of the interaction of the individuals' cognitive abilities and that of the demands of the society in which they live.

The interaction of the individual with society is best discussed in terms of the repertoire of adaptive behaviours exhibited by the individual: those behaviours essential for the manipulation and comprehension of the environment (Maggs, 1974). Attempts at quantifying adaptive behaviour for the purpose of individual assessment have included the Vineland Social Maturity Scale (Doll, 1953), the Adaptive Behaviour Scale (Nihira, 1969) and more recently, the Scales of Independent Behaviour (SIB) (Bruininks, R., Woodcock, R., Weatherman, R. & Hill, B. 1985).

Scales of adaptive behaviour have been subject to criticism because they are highly dependent upon informant-based data and observation (Blackman, 1972). Here the issues include their lack of sensitivity and their susceptibility to observer bias. One possible means of overcoming this may be by the adoption of a multi-informant technique. A further

criticism of the behavioural perspective has been that they too fail to consider the skills necessary for competent social interaction (Greenspan & Schoultz, 1981). While there has been a strong focus on practical living skills other important skills such as interpersonal social skills and the so-called 'social IQ' has been neglected.

The notion of a social IQ can be noted in the literature as early as the work of Thorndike (1920) who considered intelligence in terms of the ability to understand and manage men and women and to act wisely in human relations. Vernon (1969) also spoke a general ability to get along with people. Keating (1978) introduces a dimension of moral reasoning and Marlove & Bedell (1982) explore the importance of the social action of role playing ability. A further development of this is to be observed in the notion of social objectives posed by Marlow (1985). Marlow seeks to devise a measure of social IQ through an individual's ability to achieve social goals and objectives and speaks of it as the measure of the individuals' ability to understand the feelings, thoughts and behaviours of both the self and others.

An Operational Definition for Habilitative Intervention.

A psychometric approach remains, for the present time, the most effective and efficient means of estimating the incidence of cognitive deficits in the population and appears to have strong diagnostic reliability. For this reason, IQs are probably the most appropriate

measures to assist in resource allocation. The etiological perspective appears to be most appropriate for application in the field of psychological research directed, as it is, toward developing an understanding of causation with the intention of devising strategies aimed at prevention. However, for the purposes of clinical assessment and habilitation, the behavioural perspective is the most applicable. It provides information relevant to the development of strategies for the delivery of day-to-day services. Leland (1972) concludes that it can be said that a child is retarded (*etiological*), functioning in a manner below that expected for their peer group (*psychometric*) and that we can do something about it (*adaptive behavioural*) (italics, my own).

Intellectual disability is therefore best understood in terms of the definition posed by the AAMD: "*a sub-average general intellectual functioning, existing concurrently with deficits in adaptive behaviour and manifested during the developmental period* " (Herber, 1961, p.11). This definition, while acknowledging a deficit in general cognitive functioning, also focuses on the important component of adaptive behaviour, at which point habilitation can commence.

While a 'deficit theory' focuses on the status of neural integrity and *information* processing ability, the modification of adaptive behaviour is best planned in accordance with 'developmental theory' (Myne and O'Conner, 1979). In their discussion of exceptionality, Wyne and

O'Conner conceive of the individual in terms of three domains: cognitive (intellectual functioning), affective (emotional functioning) and psychomotor (physical functioning). Each of these domains exist independently of the other. Each however, interacts so as to affect the other.

A key issue with the developmental perspective is that 'labels' as they are applied to individuals should be considered descriptors of their current situation rather than a long-term diagnosis. This approach is one, which acknowledges that individuals at different stages of their lives move along each of the three dimensions at differing rates. Further, each of the dimensions are considered an open-ended continuum to which points determining normality / abnormality are not fixed. An individual's location along each of the three continua is interpreted by his / her degree of exceptionality: i.e., mild, moderate, severe or profound. Further, this perspective allows descriptors to be applied with specific reference to one or other domain without undue effect on other domains, which may not be so affected.

With the developmental perspective, disability emerges when any one of the three domains interact so as to negatively affect the individuals' ability to adapt to his / her environment to such a degree that he /she requires special intervention in any one of the three dimensions; e.g.: language and learning in the cognitive domain, personal and social skills

in the affective domain or manipulative and motor skills in the physical domain.

The developmental perspective gives rise to an interactive approach for intervention. This focuses on increasing the individuals' independence of response to the immediate nature of a stimulus and also to develop his / her adaptive capacity to deal simultaneously with several stimuli (Brumer, 1963).

Having established the developmental perspective as the most useful framework around which to design habilitation support strategies, the question then arises as to the most appropriate environment in which to implement such supports. To this end, a review of the principles of Normalization appears warranted.

NORMALIZATION & SOCIAL ROLE VALORIZATION

Normalization has become the single most important concept in service provision for people with intellectual disability. It is the means by which dissatisfaction with services and the demands for their change of have been articulated, standards for service provision established and the means by which their degree of success has been assessed. However, Normalization is neither a simple nor well-understood concept (Briton,

1979). It is open to many differing interpretations and a variety of applications (Anstey & Gaskin, 1985).

Originally developed in Scandinavia during the 1950's, the principles of Normalization were adopted in the United States during the 1960's and, more recently, in Australia. During this period two distinct, yet complementary schools of thought regarding Normalization, its essence, direction, process of implementation and intended outcomes have developed. These two schools of thought are represented by the work of Nirje and Wolfensberger.

Nirje's Model

Nirje (1970) discusses Normalization in terms of *"making available to the mentally retarded (sic) patterns and conditions of every day life which are as close as possible to the norms and patterns of mainstream society "* (p.62). This is a similar perspective to that of Banks-Mikkelsen (1976) who espouses the right of those with intellectual disabilities to have available opportunities, which are as close as possible to those available to the rest of the community.

For Nirje and his colleagues, Normalization and the assessment of the degree to which it has been achieved focuses upon the environment. The environment is assessed by the degree to which it provides people with intellectual disability with opportunities for self-discovery, growth and

development as individuals and as part of a wider community. For this purpose, some aspects of the environment which Nirje (1985) suggests need to be examined include the physical structures and their location, economic opportunities such as meaningful employment and social opportunities in which the individual can develop relationships and express emotions in ways which foster incorporation into society. Nirje notes the importance of establishing normalised temporal rhythms of the day, the week and the individual's life cycle, which are comparable with those of the community in which they live (ibid.).

Wolfensberger's Model

Wolfensberger (1972) originally redefined Nirje's principle of Normalization in terms of *"the utilisation of means which are culturally normative in order to establish and or maintain personal behaviours and characteristics which are as culturally normative as possible"* (p.28).

Further light may be shed on Wolfensberger's early understanding of Normalization by reference to his stated intention: *"The ultimate concern of the Normalization principle is the maintenance or attainment of non-deviant or normative behaviour"* (p.13).

While Wolfensberger's original focus was the normalisation of people, a major part of his contribution to the development of Normalization theory has been in the development of the Program Analysis of Service Systems (PASS) instrument (Wolfensberger & Thomas, 1983). This

instrument effectively operationalises Normalization theory in such a way that it may be applied to the design, assessment and redevelopment of human services. It assesses all aspects of a service including the physical setting and structure, service structure, substance and components of the project, the language and symbols employed by the service and subsequently the degree to which they positively or negatively affect the development of the clients of the service. The PASS has the affect of empiricizing attempts at Normalization so that progress may be mapped and finite resources readily directed to areas where distinct deficits are identified.

The use of PASS has been criticised in that its function is to measure conformity to the Normalization principle where as "*...the real issue should be the effect of these systems on the individuals they are designed to serve*" (Mesibov, 1976, p.30). Despite this criticism, four PASS factors have been shown to significantly contribute to growth in adaptive behaviour: administrative policy, location & proximity of services, conformity to surroundings & appearance, environmental balance of service with neighbourhood (Eyeman, Demaine & Lei, 1979). For this reason PASS may be useful in addressing the need for empirical assessment of ecological variables identified by Emerson (1985).

When assessing the degree to which the principles of Normalization have been implemented, O'Brien (1980) cites three important considerations:

the extent to which the service works against the dehumanisation of clients, the age-appropriateness of the means employed in service delivery and the degree to which services isolate or segregate clients from the mainstream of society.

Social Role Valorization

During the 1980's, Wolfensberger reconceptualised Normalization theory in terms of Social Role Valorization (S.R.V.). In so doing, he proposed that *"the most explicit and highest goal of Normalization theory must be the creation, support and defence of valued social roles for people who are at risk of devaluation"* (Wolfensberger, 1983 p.234). In this statement Wolfensberger emphasises the importance of the availability of positive models, positive role expectations, the development of positive self-image and the development of self-efficacy. It is arguable therefore, that S.R.V. is a return, on the part of Wolfensberger, to a focus on Nirje's original concept of making available to people opportunities which are as close as possible to those of normal society.

S.R.V. is not primarily about the normalization of people. Rather, it is concerned with effecting change in certain aspects of their lives so as to make available opportunities which promote their growth and development and which enable them to realise their human potential.

While such a principle encourages the use of generic services by people with intellectual disability to minimise isolation from the mainstream of

society, it does allow for the provision of specialist services where necessary so that the individual may participate more fully in the wider community (Perrin & Mjre, 1985). Further, S.R.V. need not be considered an 'all or nothing' concept. It may be applied to varying degrees to varying agencies and services according to need and practicability. This is so even in large scale institutional services (Kelinberg & Galligan, 1983). So too with regard to the degree of disability exhibited by the individual, the principles of S.R.V. can be applied to the rhythm of life enjoyed by an individual according to his / her needs and capacities.

The design and development of services for people with intellectual disabilities may benefit by reference to the principles of S.R.V.. The aim of this is not to 'make people normal' but to facilitate the establishment of appropriate structures which, in turn, promote their growth and development and which enable people to become more able, active and valued participants in the community. Arguably, the most explicit attempt to operationalise the principles of S.R.V. has been the deinstitutionalisation of services for people with disabilities and the subsequent attempts to promote their integration into the mainstream of the community.

S.R.V. & THE DEINSTITUTIONALISATION OF SERVICES

Where and how people with intellectual disabilities live are important factors affecting the nature and rate of their development (Lakin, 1986).

The recognition of this, together with *changing social* and professional perceptions regarding the capacities of people with disabilities has contributed to the reshaping and deinstitutionalisation of services for people with disabilities (McMillian, 1977; Wyne & O'Connor, 1979).

Institutional Services

Institutional services originated at the time of the industrial revolution. Urbanisation and the increasing demands of the labour market for technical expertise excluded less able people from active participation in society. Subsequently, institutions (asylums), often established as charities, were built to care for those who were unable to participate in the mainstream of society.

From the 1950's onward, dissatisfactions have been expressed with regard to institutionally based services. Standen (1954) identified "*institutionalism*" as a distinct syndrome which manifested itself quite apart from an individual's pre-existing clinical diagnosis and which had negative effect on his / her development. This condition was characterised by such factors as self-injurious behaviour, inappropriate social affect and gradual decline of the individual's capacity for effective interaction with others. Barton (1959) reported similar findings and

coined the term “institutional neurosis”. Lyle (1960) noted the negative effects of the institutional environment on 'imbecile children'. A subsequent comparative study conducted by Tizard (1960), utilising matched pairs, allocated subjects to either traditional institutional settings or 'nursery care' settings. This work confirmed the assertions of Lyle (1960) with regard to the 'retardation' of verbal development. Later work by Tizard (1964) further suggests that there is a negative effect on the acquisition of social skills.

Criticisms of the institutional model of service have brought about the review of these structures, a reduction in admissions to such institutions and the development of alternative small-scale community-based facilities. This process has been greatly influenced by the principles of Social Role Valorization (Wolfensberger, 1983). These moves have generally been reported to have positive effects on the adaptive behaviour of people with intellectual disabilities (Close, 1977; Schroeder, 1978; Fiorelli, 1979; Conroy, 1982).

While the deinstitutionalisation of services has generally been viewed as a positive move, several unintended negative consequences of deinstitutionalisation have emerged. These have included the development of 'mini-institutions' in the community, and an increase of placements in locations distant from the individual's family. There has also been a shift in the focus of both research and financial support

towards people with mild to moderate disabilities, who may be more readily assimilated in to the community, and away from people with more severe disabilities (Willer & Intageliata 1980).

The Importance of Program Content

With regard to the acquisition of adaptive behaviour, some studies raise serious questions about the importance of the physical setting alone when compared to other program variables. Campbell (1971) reports a study of 37 matched pairs living in either a hostel or a hospital. The author notes the lack of progress in hostel placements when compared to that of the progress observed in hospital patients. This is explained by the higher staff / client ratios in the hostel which enabled staff to do more for the clients as opposed to the hospital setting where patients were expected to attend to many of their own needs. Here however, it is important to note that even in larger institutional settings individualised patterns of care have been noted (King, Raynes & Tizard 1971). Eyeman, Silverstein & McLain (1975) examine the changes in ambulation and toilet training of both residents and former residents of a large institution. Their longitudinal study (2 years) reported that gains in ambulation were significantly greater for subjects involved in the institution's sensory-motor training program than for subjects in community care.

Sandler & Thurman (1981) conclude that there is limited support for the view that people with intellectual disability benefit from placement in the

community as opposed to traditional institutional settings. Willer & Intageliata (1982) observe that it is a gross misconception of the principles of Normalization that community settings are necessarily better than institutional settings by virtue of the fact that they are in the community. In their comparison of family care and group homes as alternatives to institutional care, they concluded that institutional training in self-care skills was just as effective as the alternative community-based training. A possible explanation of this may lie in the observations of Kleinberg & Galligan (1983) that note the development of the individual in the community setting varies considerably according to the habilitative orientation of the setting. While the form of some community settings fosters growth and development, "*... others function as little more than mini-institutions in the community* (ibid p.249).

Structures Conducive to Habilitation

Habilitative intervention developed to remediate the effects of intellectual disability does not necessarily depend upon community placement.

Indeed community placement may only be possible as a result of successful habilitation within the institution. Fox (1985) observes, "*you have to civilise before you can normalise* " (p.237). Again, it is

Kleinberg & Galligan (1983) who note that following placement in a community setting it is generally those skills possessed by the client prior to deinstitutionalisation that flourish rather than skills acquired as a result of community placement.

The important consideration in developing services for people with intellectual disability is therefore not simply one of institutional versus community-based settings. Rather it is one of custodial versus therapeutic orientations of these settings (Kleinberg & Galligan, 1983). This proposition has important repercussions for the provision of services for people with moderate to severe disabilities. For them, community living may not at present be an option, for a variety of social, economic and clinical reasons. However, it has been demonstrated that even individuals with moderate to severe disabilities benefit from the effects of positive, enriched and normative environments (Berksoin, Landersman & Dwyer, 1977; Menolsascini, 1981; Silverman, 1986; Schoitmann & Anderson, 1987).

If services for people with intellectual disability are to be effectively client-orientated and Willer & Intagliata's (1982) 'fit between client and service' achieved, it is proposed that rather than deinstitutionalising the clients, we deinstitutionalise the services. This involves addressing such negative factors as the rigidity of routine, depersonalisation of clients and their isolation both from opportunities for interpersonal relationships and positive behavioural models. It is also necessary to re-establish some of the barriers which exist to positive effect in mainstream society and which distinguish between different aspects of the lives of individuals. For example where they live, where they work and where their recreation

takes place (Parsons, 1960; Coffman, 1961; Kings, Raynes & Tizzard, 1971). For people with disabilities these places are all too often one and the same location.

Emerson & Emerson (1987) have challenged the effectiveness of habilitative programs in institutional settings. They believe that negative factors such as decision-making processes, staff orientations and staff / client interactions, together with the lack of opportunity for appropriate behavioural modelling, rehearsal and suitable reinforcements are too powerful to overcome. However, many of the structural and procedural issues which pose difficulties may be identified by PASS and changes effected in accord with Social Role Valorization theory, as specified by PASS criteria.

With regard to staffing factors and the development of effective rapport, in-service development in terms of Mitchell's (1990) 'liberation model for disability services' may be effective. The model is based on the premise that people with disabilities are oppressed by society and that this oppression is caused primarily by fear. Mitchell proposes that this oppression is, in turn, internalised by people with disabilities and negatively effects their development. The model suggests that all people experience oppression to varying degrees and that if made conscious of this, they are more able to become allies of people with disabilities and to assist them to overcome their experience of oppression. Limited work on

this model has shown that the clients of staff who had undergone training in the liberation model appeared more satisfied with their care and required less contact with the service co-ordinator than did those clients of staff who had not undergone such training (ibid).

S.R.V. & EMPLOYMENT OPPORTUNITIES

In western society, paid work and the subsequent role of the employee are highly valued. In accord with Wolfensberger's (1983) principles of Social Role Valorization (S.R.V), it is important that the role of employee be made more readily available to people with intellectual disabilities. This can provide the individual with an opportunity to develop positive adaptive behaviours, self-image and personal competency (Cordon, 1987). Further, it can provide an opportunity for the individual to make (and, importantly, to be seen to make) a meaningful contribution to society, thus creating an environment conducive to community integration (Gifford, Rusch, Martin & White, 1980).

Models of Employment for People with Intellectual Disabilities

Sheltered employment has long been established for people with mild to moderate disabilities. Originally conceived as simply activities with which to keep people in institutions occupied, they were then developed

as occupational / industrial therapy, usually with specific habilitative goals. Later, Adult Training Centres (A.T.C.s) were established in the community with the intention of providing skills training and opportunities for people with disabilities to earn money in normalised settings.

Rusch & Schutz (1981), in a review of social and work-related behaviours in workshops and A.T.C.s conclude that the primary method of training was *"supervision with vague instruction and occasional prompts to stay on task "* (p.287). This has contributed to the finding that, for people with severe disabilities, the transition to open or non-sheltered employment is rare (Gold, 1975). Further, Whitehead (1979) observes that the only individuals in sheltered workshops and A.T.C.s who obtain open employment are those who do not require skills training. However, studies do demonstrate that even those with severe disabilities, given the appropriate opportunity, will acquire the skills necessary for meaningful work (Bellamy, G., Horner, R. & Inman, D., 1979; Bellamy, G., Peterson, L. & Close, G., 1975; McLeod, 1985). That is, work normally performed by a person without a disability and for which money is paid (Grbich & Sykes, 1990).

The training and the development of skills necessary for meaningful and productive work is, in accordance with the principles of S.R.V., a highly desirable habilitation goal (Stodden & Browden, 1986). Sheltered

workshops and A.T.C.s have shown themselves to be inappropriate to this purpose. However, the supported employment options (S.E.O.s), established under the Commonwealth Disability Services Act (1986) are purposefully designed according to the principles of S.R.V..

S.E.O.s enable people with disabilities to participate in meaningful work, which provides them with opportunities to learn and rehearse new skills, earn money, establish themselves in socially-valued roles and so develop in such a way as to remediate the effects of their disability. For this purpose several models of S.E.O. have arisen: individual placement, cluster placement, mobile work crews and entrepreneurial teams (Rusch & Hughes, 1989).

From the outset, S.E.O.s need to mobilise psychological emphasis on the importance of developing the individual's self esteem, self-respect and self-efficacy (Herber, 1961; Maslow, 1973). Where necessary, systematic behavioural analysis and modification may be useful (McLeod, 1985). Factors such as appearance, grooming, social skills, assertiveness training and the importance of structured positive reinforcement need to be considered. It is also important that individuals perceive themselves as *"cause and prime mover influencing outcomes and events in their lives"* (Stodden & Browden, 1986 p. 50). Here it is worth reflecting that all too often such tasks are introduced to people as yet another therapy "programme". It is important that if we expect their

serious participation and commitment that we present these activities so as to reflect the serious demands of real work for real pay (McLeod, 1985).

The relevance of training to an individual's life experience is also important. The timing and context of training should be closely linked to the actual engagement in work tasks. Teaching people with severe disabilities in the environment to which the skills are to be applied is the optimum training tactic (Stodden & Browden, 1986). This allows for interaction with non-disabled workers and the practice of generic work place skills (Martin & Horsfall, 1987). It should also be noted that Shalock & Harper (1978) report a lack of skills generalisation between living and vocational skills development. They conclude that the skills are distinct from each other and should be taught separately.

DIRECTIONS FOR FUTURE RESEARCH

Silverman (1986) demonstrates the link between the development of people with disabilities and their immediate social environment. Further, Rusch & Hughes (1989) conclude that intellectual disability is not a long-term disabling condition with poor prognosis for remediation. Therefore if intellectual disability is viewed in the context of a repertoire of adaptive skills, it is proposed that, given an environment which is conducive to the learning and rehearsal of these skills, the effects of

intellectual disability, even for those with more severe disabilities, can be remedied.

The development of a habilitative environment would appear most effective if done in accordance with the principles of S.R.V.

(Wolfensberger, 1983). While research has demonstrated S.R.V.'s positive effects on the lives of people with mild to moderate disabilities, living in deinstitutionalised settings, it is proposed that S.R.V. may also be effective in the habilitation of people with more severe disabilities, resident in institutional settings. This may be best investigated through the establishment of S.E.O.s within institutional programmes and longitudinal studies focusing on the acquisition of skills of adaptive behaviour.

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**Supported Employment and its Effects on the Adaptive Behaviour
of People with Intellectual Disability**

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Abstract

A pilot study investigating the effects on the adaptive behaviour of people with moderate to severe intellectual disability, living in an institutional setting, as a consequence of their involvement in supported employment options (SEO's) is reported. It was hypothesised that as a result of their involvement in S.E.O.'s, participants' adaptive behaviour would increase and their maladaptive behaviour would decrease; further, that this effect would be more evident the more in keeping S.E.O.'s were with the principles of Social Role Valorization (S.R.V.). Twenty-four participants were randomly allocated, 8 to each of 3 options: a work crew, a bench top team, and an in-house control. Behavioural attributes were measured by the Scales of Independent Behaviour (S.I.B.) in a pre-test / post-test design using multi-informants for each participant. After a one-month exposure to the S.E.O.'s there was no significant improvement in adaptive behaviour, nor was there any significant decrease in maladaptive behaviour. This was attributed to the participants' limited exposure to the work options and the possible lack of sensitivity in the S.I.B. over such a short period of time. A wide variety of issues relevant to the design and implementation of future evaluations are discussed and recommendations made.

Intellectual disability is commonly understood in terms of a deficit in cognitive efficiency (Ogler, Balla & Hodapp 1984; Hodapp & Zigler 1986), characterised by IQ two standard deviations below the mean (i.e., an IQ of 70 or below) (DSM 111-R). However, Herber (1961) defines intellectual disability as "*sub-average general intellectual functioning, existing concurrently with deficits in adaptive behaviour and manifested during the developmental period*" (p.11). Furthermore, Barnett (1986) discusses intellectual disability in terms of a status defined by the interaction of the individual with their environment. For the purpose of habilitative intervention therefore, a more useful means of conceptualising intellectual disability is in terms of a person's social adaptation and the development of socially relevant (and functional) skills.

Studies examining the adaptive behaviour of people with intellectual disability have focused on the deinstitutionalisation of services and the principles of Normalization / Social Role Valorization (S.R.V.): "*The creation, support and defence of valued social roles for people who are at risk of devaluation*" (Wolfensberger, 1983 p.234). This process, it is proposed, enables people to establish and / or maintain personal behaviours and characteristics, which are as culturally normative as possible and thereby foster, their acceptance by, and participation in, the community.

A review of the methodology adopted by some deinstitutionalisation studies is, however, warranted. When people with intellectual disability have been moved from one residential environment to another, studies have failed to collect baseline data prior to the move (Schroeder & Henes, 1978; Bell Schoenrock & Bensberg, 1981). Other studies have attempted to discuss issues of skill development across different environments, utilising poorly matched groups (Wiler & Intagliata 1981, 1982). A number of studies have neglected to employ control / comparison groups (Aninger & Bolinsky, 1977; Thompson & Carey, 1980). Other issues, such as the use of non-representative samples, failure to evaluate environments and differentiate between different treatments have been noted (Emerson, 1985). Some studies have however, employed the more robust pre-test / post-test methodology, have included comparison groups and have undertaken substantial matching and control techniques (Kushlick, 1975; Close, 1977; Fiorelli & Thurman 1979).

Kushlick (1975) concluded that significantly greater progress occurs among community based participants in eating, dressing and socially appropriate behaviour than among those in institutions. Similarly, Close (1977) reported significantly greater gains over one year in eating, toileting skills and personal hygiene of group-home residents than for institutional controls. Fiorelli & Thurman (1979) reported significant increases of group maintenance activities after six weeks' placement in a group-home.

Apart from locality, other variables, associated with programme quality, have been identified as important to the development of adaptive behaviour. These variables include the creation of opportunities for people to develop and rehearse new skills, together with staff training and development (Mitchell, 1990).

Campbell (1971) reported findings where hospital residents scored significantly higher in behavioural skills than did a matched group in a community hostel. This was attributed to the higher staffing ratios in the hostel and the tendency of staff to assist, if not totally perform, many of the tasks which participants in the hospital were left to perform for themselves. Eyeman, Silverstein & McLain (1975) examined changes in ambulation and toilet training of residents and former residents of a state institution. Over two years, 75% of hospital residents improved significantly while only 50% of community residents improved significantly. They concluded that skill development was not a product of the environment, but of the quality of the program. Similarly, Kleinberg & Galligan (1983) concluded, "*the issue, at least with regard to progress, is not institution vs. community, but custodial vs. therapeutic orientation*" (p. 26).

O'Connor (1976) and Sacklett (1978) reported data supporting the view that community facilities are not necessarily normalised / socially valorised: "*making available to the mentally retarded patterns and*

conditions of every day life which are as close as possible to the norms and patterns of mainstream society“ (Nirje, 1970 p.62). Sandler & Thurman (1981) concluded that the literature provides only limited support for the view that people with intellectual disabilities benefit from placement in the community. While community residences are more conducive to establishing socially valorised roles they do not necessarily guarantee them.

The conclusion drawn by Sandler & Thurman (1981) is not so much a negative view of community integration, but a positive impetus for change within institutions. Deinstitutionalisation is only a mechanism by which people are given access to opportunities for the development, rehearsal and enhancement of skills. This process is not necessarily commensurate with the non-institutional setting, and other mechanisms may be found whereby similar effects can be realised within the institutional setting. This becomes important when, for various economic and social reasons, life in a deinstitutionalised setting is not an immediate option for some people. The question therefore arises as to which aspects of the deinstitutionalised environment can be established in the institutional environment in order to create situations conducive to the development of adaptive behaviour.

Eyeman, Demaine & Lei (1979) report the importance of resident orientated practices as crucial components for achieving psychological growth. Seltzer (1981) identifies increased opportunities for structured

training, the opportunity to assume responsibility, increased autonomy, clearly defined task expectations and ease of access to resources as essential to the development of adaptive behaviour. Moloney & Taplin (1988) cite the findings that residents in community settings more frequently engage in functionally related activities and interact socially to a greater degree with staff and non-disabled persons than do residents in institutions. Molony & Taplin also cite increased opportunities to exercise autonomy as significant predictors of improvement in adaptive behaviour (p.116).

One aspect of a socially valorised community environment conducive to the development of adaptive behaviour is the opportunity offered for vocational pursuits. This opportunity can provide the individual with structured learning experiences, social interaction with a wide group of people, an experience of autonomy, self-expression and a sense of what it means to be a valued member of the community.

Research has established that people with severe disabilities can acquire skills needed to perform meaningful work (McLeod, 1985). Specifically, supported employment has been shown to elicit positive effects in the lives of people with even severe to profound disabilities (Bellamy, Peterson & Close, 1975; Bellamy, Homer & Innman, 1979; Bellamy, Rhodes & Bourbeau & Mank 1986).

Situations of supported employment are characterised by opportunities for the training and development of individuals in specific tasks and functions. High staff / client ratios ensure that sufficient time is available for individual instruction. On-going support of the individual in the work place with regard to social support and instruction in activities, not directly bearing upon work functions, but still necessary to their employment are also given a high priority.

Different models of supported employment have been developed: individual placement, entrepreneurial teams and works crews (Rusch & Hughes, 1989). Those, which are most easily adapted for development in an institution, would appear to be the entrepreneurial team (engaged in manufacturing along the lines of a bench-top model) and the work crew (engaged in a variety of service tasks such as janitorial and ground maintenance).

In line with previous findings, it is proposed that as a result of involvement in supported employment, the adaptive behaviour of people with moderate to severe intellectual disability, living in an institutional setting, will increase and that their maladaptive behaviour will decrease. Further, in keeping with the principles S.R.V., that the effect will be more evident in a mobile Work Crew than in a Bench Top Team performing more traditional sheltered employment tasks.

Method

Participants

A group of 24 residents (10 females and 14 males) were selected from an institutional population of 250 adults. Four criteria were used to select participants. First, participants had to have been resident at the institution for a minimum of 6 years ($M=19$ years 6 months, $SD=6$ years 11 months). Secondly, they had to be of working age, 18 to 55 years, according to institutional standing orders ($M=37$ years 8 months, $SD=7$ years 6 months). Thirdly, they had to be functioning at a moderate to severe level of intellectual disability. Institutional records (previous assessments of adaptive behaviour and psychometric reports) and the clinical judgement of the senior clinical psychologist provided the basis for assessing the degree of disability of each individual. Fourthly, participants were selected on the basis of no previous full-time work experience. Of the original 30 residents who were identified, 6 were excluded because of physical impairments that would have prevented them from participating in the most physically demanding of the work options (the work crew).

Design

A pre-test / post-test design was adopted. The dependent variable was change in adaptive behaviour across time. The independent variables were two occupational options, conducted on-campus: a work crew and

an entrepreneurial bench-top team. An in-house comparison group was established as a control.

Instrumentation

Adaptive behaviour was assessed using the Scales of Independent Behaviour (S.I.B.) (Bruininks, Woodcock, Weatherman & Hill, 1985).

The S.I.B. was developed specifically for use in the field of intellectual disability. Its validity and reliability have been established (Sattler, 1982).

S.I.B. assesses the following skills: gross motor co-ordination; fine motor co-ordination; social interaction; language comprehension; language expression; eating and meal preparation; toileting; dressing; personal self care; domestic skills; time and punctuality; money and value; work skills; and home and community orientation. The items are grouped to form three skill-related clusters: social and communication skills; personal living skills; and community living skills. These clusters are combined to generate a Broad Independence Score.

A measure of maladaptive behaviour is included in the S.I.B.. The items are clustered into three groups: internal maladaptive behaviour; external maladaptive behaviour; and asocial maladaptive behaviour. These clusters are combined to generate a General Maladaptive Index.

Procedure

Participants were selected on the basis of the criteria detailed above and randomly allocated, eight each, to one of three occupational options. A baseline measure on the S.I.B was established for each participant. A multi-informant method was used with two respondents (nurses and / or experienced residential staff) being interviewed separately about each participant. The mean score from the two respondents was used for analysis.

Participants worked at their assigned option, on a voluntary basis, for a period of one month. During this period a register of attendance at work was maintained as was a record of structured leisure time and of any programmes conducted by the institution's Clinical Resources Department (psychology, speech therapy, occupational therapy).

The work crew was contracted by the institution to maintain the grounds. It was supervised by full-time grounds persons and provided with support by programme officers from the Clinical Resources Department. Staff / client ratio ranged from 1:8 to 2:8. For full-time work, the day commenced at 8:30 am and concluded at 4:30 p.m. Lunch was taken between 12 noon and 1:00 p.m., with participants returning to their respective residences.

Participants were allocated their own overalls and work boots for which they were responsible. At work they were provided with systematic instruction in the tasks concerned. Participants had supported access to required tools, including motorised lawn mowers.

The bench-top team worked as part of the institution's employment service which employed residents in a variety of options, including rag cutting, cottage crafts and product packing, under contract to businesses in the community. Protective clothing was available. All activities were supervised by a programme officer either working within the employment service or on secondment from Clinical Resources. Staff client ratios ranged from 1:5 to 1:10.

The bench-top working day was the same as that for the Work Crew. Participants were given access to required tools and equipment including electric rag cutters. The in-house group was involved in domestic tasks under the supervision of nursing staff (staffing ratios approximately 1:10). Some structured leisure time was provided.

Following one month's exposure to the work options, a second S.I.B. assessment was conducted. Again, a multi-informant method was employed and the mean score for the two respondents used for the final analysis. Where possible, the same respondents as at the pre-test stage were interviewed.

Results

Data analysis was conducted using an IBM based statistics package, Complete Statistics System (CSS).

Reliability of Data

Inter-rater reliability was established for sub-scales, cluster scores, broad and maladaptive scores both at pre-test and post-test by means of correlation (Pearson's r) (refer Appendix 1a). For adaptive behaviour, the results suggested a significant ($p < .05$) moderate to high order correlation, except for the work sub-scale at post-test ($p > .05$). For maladaptive behaviour there were no significant correlations at pre-test. However, at post-test, ratings correlated significantly ($p < .05$) and were of a moderate to high order.

One way ANOVA between the three groups for sub-scales, cluster groups and broad scores revealed no significant differences ($p > .05$) in S.I.B. scores at pre-test (refer Appendix 1b).

Age and Institutional Effects

Correlations between age and S.I.B. scores were conducted. In some instances age significantly ($p < .05$) correlated with S.I.B. scores at a low to moderate order for sub-scales, clusters and broad independence scores in the domain of adaptive behaviour at both pre and post-test (refer Appendix 2a). There were no significant ($p > .05$) correlations in the

maladaptive domain. In view of the significant correlation's one way ANOVA was conducted. This revealed no significant difference, $f(2,21)=2.49$, $p=.12$, in the distribution of age between the three groups (refer Appendix 2b).

Correlation's between the length of institutionalisation and S.I.B. scores were conducted. In some instances length of institutionalisation significantly ($p<.05$) correlated (negatively) with S.I.B. scores, at a low to moderate order, for sub-scales, clusters and broad independence in the domain of adaptive behaviour at both pre and post-test. A similar effect was revealed in the maladaptive domain at post-test, in contrast to pre-test (refer Appendix 2c). In view of the significant correlation's one way ANOVA was conducted. This revealed no significant difference, $f(2,21)=.34$, $p=.71$, in the distribution of the length of institutionalisation between the three groups (refer Appendix 2d).

Treatment Effects

Two way ANOVA were conducted on all sub-scales, clusters, the broad independence scores and maladaptive scales (refer Appendix 3a). There were no significant main effects of group (Crew, Bench, Home). There was only one significant effect, for the Community Living cluster across time, $f(1,21)=15.03$, $p<.01$. This effect was observed by way of a significant decrease in the Community Living cluster score from pre-test to post-test (Table 1).

Table 1
Community Living Cluster - Mean Scores Pre/Post-test.

Option	Pre-test M	SD	Post-test M	SD
Work Crew	419.25	29.09	410.75	37.33
Bench Top	427.28	35.78	402.81	43.75
Home	422.21	28.07	399.56	43.77

A trend was evident in the General Maladaptive Index across time, $f(2,21)=3.39$, $p=.053$ (Table 2).

Table 2
General Maladaptive Index Score - Mean Scores Pre/Post-test.

Option	Pre-test M	SD	Post-test M	SD
Work Crew	-16.81	9.97	-19.13	13.79
Bench Top	-19.50	9.93	-12.25	4.04
Home	-13.38	8.35	-15.06	6.42

Note: a decrease in scores indicates a decrease in maladaptive behaviour.

Post Hoc Analysis, Fisher LSD, suggests there was a significant improvement in maladaptive behaviour from pre-test to post-test for those participating in the Bench Top option ($p=.02$); that while at pre-test there was a significant difference between those in the Bench Top and those in the Home ($p=.05$), this was not so at post-test; and that while there was no significant difference in the maladaptive scores between the Bench Top and the Crew at pre-test, there was a significant difference at post-test ($p=.03$).

Two further trends were evident across time. First, the mean broad independence score tended to improve, $f(1,21)=.44$, $p=.09$ (Table 3) and secondly, mean scores on the eating and meal preparation sub-scale tended to improve, $f(1,21)=.66$, $p=.09$ (Table 4).

Table 3

Broad Independence Score - Mean Scores Pre/Post-test.

Option	Pre-test M	SD	Post-test M	SD
Work Crew	418.63	33.67	427.06	32.09
Bench Top	424.44	38.99	429.13	33.80
Home	422.75	28.08	424.63	28.57

Table 4

Eating And Meal Preparation Sub-scale Scores - Mean Score Pre/Post-test

Option	Pre-test M	SD	Post-test M	SD
Work Crew	86.81	5.35	87.69	5.74
Bench Top	86.25	8.70	88.50	6.63
Home	89.06	3.18	89.50	3.63

Structured Time Effects

Time sheets revealed discrepancies in the structured time involvement of participants in the two treatment conditions. One way ANOVA across the three groups confirmed a significant difference in the total structured

time (leisure and work hours), for the month, $f(2,21)=4.41$, $p=.03$ (Appendix 4a).

Post hoc analysis (Fisher LSD) suggested that there was a significant difference between the total structured time involvement by the Work Crew and that available to the Home group ($p<.01$). Further, there was a trend, with the Bench Top tending to have a more structured time than the Home group ($p=.09$). There was no significant difference between the structured time available to the Work Crew and that available to the Bench Top ($p>.05$).

Structured time was broken down into leisure hours and work hours. One way ANOVA of leisure hours across the three groups revealed no significant difference, $f(2,21)=.08$, $p=.93$ (refer Appendix 4b). One way ANOVA of work hours across the three groups revealed a significant difference, $f(2,21)=4.92$, $p=.02$ (refer Appendix 4c).

As expected, post hoc analysis (Fisher LSD) showed that there was a significant difference in work hours between Work Crew and Home options ($p<.01$). However, there was only a trend toward a difference between the Bench Top and the Home options ($p<.09$). There was no significant difference ($p>.05$) between the structured work hours of the Work Crew and those available to the Bench Top.

However, it was evident that there were unintended variations in the structured work hours for the month within the two treatment groups; Crew: $M=67.50$, $sd=56.29$; and Bench Top: $M=40.00$, $sd=49.57$. As a consequence, participants in the two treatment conditions were regrouped in order to investigate the possible cause of this unintended variation in exposure to treatment: High work ($N=6$) $M=120$, $sd=0$; Low work ($N=10$) $M=14$, $sd=5.5$. The control group remained intact ($N=8$)- No structured work hours.

The new groups were analysed for differences in S.I.B. scores between groups at pre-test. One way ANOVA was conducted on cluster and broad independence scores in the adaptive domain and on each of the scales and general index in the maladaptive domain. Analysis revealed no significant differences ($p>.05$) between the three work time groups at pre-test in either the adaptive or maladaptive domains (refer Appendices 4d, 4e).

The new groups were then analysed for an age effect. One way ANOVA revealed no significant difference across the three groups, $f(2,21)=1.45$, $p=.25$ (refer Appendix 4f).

Finally, the groups were reanalysed for an effect of the length of institutionalisation. One way ANOVA revealed no significant difference across the three groups, $f(2,21)=1.46$, $p=.25$ (refer Appendix 4g).

Discussion

A one month pilot study was established to evaluate the effectiveness of implementing supported employment options for people with moderate to severe intellectual disability resident at an institution. In line with previous findings for supported employment options in the community, it was proposed that as a result of their involvement in supported employment, the adaptive behaviour of participants in the institution would increase and that their maladaptive behaviour would decrease. Further, in keeping with the principles S.R.V., it was hypothesised that these variations in behaviour would be more evident in a mobile Work Crew than in a Bench Top Team performing more traditional sheltered employment tasks. A control group, in which participants were not provided with any structured work opportunities during the pilot study was also established. A pre-test / post-test design was adopted. Participants adaptive and maladaptive behaviour was assessed by means of a multi-informant method, using a standardised psychometrically validated instrument, the Scales of Independent Behaviour (S.I.B.).

In the adaptive domain, significant high order inter-rater reliability at both pre-test and post-test demonstrated the reliability of the S.I.B. data. That is to say, respondents were in agreement as to the adaptive behaviour of the participants. Future studies should continue to use a

multi-informant method to enable the reliability of respondent data to be evaluated.

The only exception to the significant moderate to high order correlation's in the adaptive domain, was the work sub-scale at post-test. This was neither of a moderate to high order, nor significant. During the administration of this scale, it was noted that some respondents assumed that if participants were involved in work options, it necessarily followed that they would be performing at a 'well' to 'very well' level on the items presented. Future studies would need to counter any expectancy effects by way of blind ratings for both respondents and test administrators. Though there were no significant differences in S.I.B. scores between the groups at pre-test, in the interests of countering expectancy effects, future studies should conduct pre-test assessments prior to participants' allocation to treatment conditions.

The reliability of some informant responses may have been impaired by the limited opportunity which residential staff had to observe participants performing some of the tasks concerned. Future studies will need to employ assessments of adaptive behaviour across several life situations, to assure a comprehensive appraisal of behaviours.

In the maladaptive domain, post-test correlation reliabilities were both of an acceptable magnitude and significant. The low and non significant inter-rater reliabilities for all maladaptive scales at pre-test may be

explained in terms of respondent bias. At the time of administering the pre-test S.I.B., the institution was undergoing staff restructuring. The items in the maladaptive domain addressed issues such as how serious a nominated behaviour was considered to be and the means of intervention employed. Such questions, and subsequent responses, may have been interpreted by staff as reflecting on their own competence. A parallel study of staff attitude toward the project over time would have been useful when interpreting the responses.

Also, items in the maladaptive domain tended to be of low frequency and were more open to interpretation as compared with those in the adaptive domain. This may have limited the opportunity staff had to observe and develop their understanding of participants' maladaptive behaviours. The later increase in reliability may have been the result of staff involvement in data collection and, subsequently, their increased awareness of these behaviours.

The data suggested a possible effect of age and, to a greater degree, an effect of the length of institutionalisation. The correlation analysis indicated that older clients (particularly at post-test) tended to have a higher level of adaptive behaviour and that the longer the length of institutionalisation, the higher the level of maladaptive behaviour. However, pre-test ANOVA across the three groups demonstrated the effectiveness of the randomised allocation of participants to groups, and provided evidence that these variables had been effectively controlled.

Furthermore, in the absence of any significant difference in S.I.B. scores between groups at pre-test, it was concluded that groups were initially equivalent in terms of adaptive behaviour.

The only significant difference in adaptive behaviour was across time. This was with regard to a decline in mean scores for the community living cluster. The effect may have been a negative response on the part of participants to change in a life situation requiring adjustment. Longitudinal analysis is warranted prior to drawing any further conclusions.

The trend for change in the maladaptive index suggests that the maladaptive behaviour of those in the Bench option decreased. The demands of this option included the requirement to work in close confines with their colleagues and to spend considerable time on-task in a concentrated effort to produce quality work under close supervision. The increase in the maladaptive behaviour of those in the Crew may have been the result of a greater experience of freedom of self-expression, coupled with less supervision and direction than that provided to the Bench option.

With regard to the Crew's trend for increased maladaptive behaviour, it should be noted that assessment of maladaptive behaviour was conducted in-house. An increase in maladaptive behaviour may have reflected participants' frustration; having had an opportunity to experience

productive work during the day, they were then required to return to the more regulated environment of the houses. Comparative data of adaptive and maladaptive behaviour collected in both the work place and domestic setting would be required in any future study so as to determine if the trends were general or situational specific.

The trend for the broad independence score to increase from pre to post-test was interpreted as an indicator of possible treatment effects. As may have been predicted, the greatest gains in adaptive behaviour were demonstrated with the Crew, followed by the Bench option. However, as previously noted these effects could also have been accounted for by way of expectancy effects on the part of staff who were aware those residents were involved in a work project. Some gain was also observed with the Control. This may represent a natural acquisition of skill over time as a result of domestic activities and warrants further investigation.

While the study did not find any main effect of group / treatment, the trend in the broad independence score suggests that study over a period greater than one month may be required if significant change in behaviour is to be observed by use of the S.I.B. So too, the sensitivity of the S.I.B. when applied in an institutional setting warrants further investigation. Staff working with a number of people at any one time may lack the opportunity for close behavioural observation, or may be participants to a 'halo effect' when developing their assessment of the behavioural skills of residents with whom they work.

The between groups analysis of structured leisure hours established that this factor was effectively controlled across the three groups.

Furthermore, the between group analysis of structured work hours established that the Crew and the Bench option were equivalent, but only the Crew was significantly different from the control group; the Bench option suggested only a trend toward being significantly different from the control. This may have resulted from the large variation in work hours within the groups. This variation in the distribution of structured work hours was interpreted as clinically significant in so far as experimental participants had not, as was intended, received equal exposure to the treatment conditions. It was on this basis that, post hoc, participants were regrouped in order to examine some of the factors, which may have contributed to the present results.

As with the original groups, one way ANOVA established the new groups as equivalent on S.I.B. scores at base line, and as not having a significant difference in the distribution of age and length of institutionalisation between groups. However, care needs to be taken when interpreting these results due to the low number of participants in the High Work Group ($N=6$). Further study over a longer period, wherein structured time effects are specifically controlled in predetermined randomised groups of sufficient N , is required prior to any further conclusions being drawn.

What can be observed is that, while there was no significant difference between pre-test scores across the three structured work time groups, there was a trend for those participants who worked longer hours to be those with higher pre-test adaptive S.I.B. scores, and those participants who worked shorter hours to be those with lower pre-test adaptive S.I.B. scores (the no work / control falling between the two). Further more, in the maladaptive domain, participants who worked longer hours tended to be those with the lower maladaptive scores while those who worked shorter hours tended to be those participants who had higher maladaptive scores.

These results suggest that adaptive and maladaptive behaviour may have, (1) affected the degree to which participants were able to engage in their assigned option; or (2) had some bearing on the allocation of staff resources which enabled people to participate; or (3) more able participants may have been given greater opportunity or assistance to enable them to take part in activities than were less able participants. Future studies will need to closely control participants' exposure to treatment conditions, ensuring equal exposure regardless of their level of adaptive skills.

As a result of their involvement in supported employment, the adaptive behaviour of participants did not significantly increase nor did their maladaptive behaviour decrease. This study therefore, does not provide conclusive evidence in support of the establishment of supported

employment options in an institution for the purpose of improving the adaptive behaviour of people with moderate to severe disabilities. Further more, the two S.E.O.'s did not appear sufficiently differentiated in terms of Social Role Valorization. Some trends however, were evident and for this reason the data warrants further analysis. It also raises several issues for application in future studies.

The study demonstrates that the S.I.B. is a useful and an appropriate instrument for the purpose of assessing adaptive behaviour, though possibly not sufficiently sensitive to detect more subtle changes in behaviour over one month. For this reason its application in longitudinal studies appears more appropriate.

Future studies will need to control for expectancy effects. A measure of respondent attitude toward data collection and the instrument concerned may be useful when interpreting responses. So too, assessment across both residential and occupational environments will be required in order to determine whether behaviour is situational specific. A multi-instrumental approach to the assessment of behaviour would also be advisable, in order to identify any effect specific to the instrument and its design.

Strict control over exposure time to treatment is imperative if meaningful interpretations are to be made. So too, with sample sizes, larger *N*'s will allow for more robust analysis and broader application of any

conclusions. Further more, while no participants were lost during the course of the present study, in longitudinal studies, larger *N*'s would allow for loss of participants due to unforeseen circumstances over time. Future studies will need also to more clearly differentiate between S.E.O.'s in terms of Social Role Valorization. For this purpose, employing a standardised instrument such as the Programme Analysis of Service Systems Implementation Normalization Goals (PASSING) (Wolfensberger & Thomas, 1983) may be useful.

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APPENDICES

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Appendix 1. Reliability of Data.

1a. Inter-ratter Reliability (Pearson's r).

Scale	Pre-test r	p	Post-test r	p
Gross motor	.48	.02	.60	.01
Fine motor	.60	.00	.69	.00
Social interaction	.62	.00	.62	.00
Language comp.	.70	.00	.71	.00
Language exp.	.75	.00	.82	.00
Eating & meals	.67	.00	.72	.00
Toilet & bath	.43	.04	.57	.00
Dressing	.83	.00	.40	.05
Personal care	.57	.04	.62	.00
Domestic	.66	.00	.67	.00
Time	.94	.00	.90	.00
Money	.81	.00	.76	.00
Work	.64	.00	.00	.10
Orientation	.76	.00	.82	.00
Motor cluster	.65	.00	.51	.01
Social cluster	.76	.00	.82	.00
Personal cluster	.59	.00	.70	.00
Community cluster	.86	.00	.83	.00
INDEPENDENCE	.78	.00	.84	.00
Internal maladaptive	.28	.17	.49	.02
External maladaptive	.34	.11	.65	.00
Asocial maladaptive	.33	.11	.72	.00
MALADAPTIVE.	.15	.48	.74	.00

1b. Pre-test 1 Way ANOVA Between Groups.

Scale	ss	df	f	p
Broad Independence	143.06	2	.06	.94
Motor cluster	575.64	2	.38	.69
Social cluster	140.27	2	.04	.96
Personal cluster	56.33	2	.03	.97
Community cluster	261.94	2	.14	.44
Internal maladaptive	45.81	2	.23	.78
External maladaptive	122.02	2	.55	.59
Asocial maladaptive	30.06	2	.15	.87

Appendix 2. Age & Institutional Effects.

2a. Correlation's Between S.I.B. & Age at Pre-test & Post-test.

Scale	Pre-test r	p	Post-test r	p
Gross motor	.21	.33	.22	.31
Fine motor	.27	.20	.42	.04
Social interaction	.29	.17	.25	.25
Language comp.	.32	.13	.41	.05
Language exp.	.20	.36	.38	.07
Eating & meals	.23	.28	.48	.02
Toilet & bath	.18	.40	.39	.06
Dressing	.29	.17	.30	.15
Domestic	.31	.14	.35	.09
Time	.21	.34	.34	.11
Money	.40	.05	.44	.03
Work	.27	.20	.41	.05
Orientation	.34	.09	.39	.06
Motor cluster	.26	.22	.26	.22
Social cluster	.27	.20	.37	.08
Personal cluster	.28	.19	.50	.02
Community cluster	.32	.12	.39	.06
INDEPENDENCE	.34	.10	.42	.04
Internal maladaptive	.17	.42	.31	.14
External maladaptive	.14	.52	.24	.25
Asocial maladaptive	.20	.36	.31	.14
MALADAPTIVE	.22	.31	.34	.12

2b. Distribution of Mean Age x Option.

Crew: M=33 years, 4 months, sd=6 years, 9 months.

Bench: M=38 years, 4 months, sd=7 years, 6 months.

Home: M=41 years, 2 months, sd=7 years, 4 months.

2c. Correlation's Between S.I.B. & Length of Institutionalisation at Pre-test & Post-test.

Scale	Pre-test r	p	Post-test r	p
Gross motor	-.18	.19	-.16	.22
Fine motor	-.46	.03	-.32	.01
Social interaction	-.50	.01	-.37	.00
Language comp.	-.50	.01	-.39	.00
Language exp.	-.61	.00	-.30	.01
Eating & meals	-.41	.05	-.31	.14
Toilet & bath	-.47	.02	-.50	.01
Dressing	-.41	.05	-.38	.07
Personal care	-.47	.02	-.45	.03
Domestic	-.51	.01	-.46	.02
Time	-.38	.00	-.67	.00
Money	-.40	.05	-.46	.02
Work	-.34	.10	-.19	.17
Orientation	-.43	.04	-.42	.04
Motor cluster	-.40	.05	-.56	.00
Social cluster	-.38	.00	-.39	.00
Personal cluster	-.56	.01	-.47	.02
Community	-.50	.01	-.55	.01
INDEPENDENCE	-.34	.01	-.61	.00
Internal maladaptive	-.16	.46	-.43	.04
External maladaptive	-.43	.04	-.43	.04
Asocial maladaptive	-.56	.00	-.44	.03
MALADAPTIVE	-.41	.05	-.52	.01

2d. Distribution of Mean Length of Institutionalisation x Options.

Crew: M=17 years, 10 months, sd=7 years, 4 months.

Bench: M=20 years, 4 months, sd=7 years, 0 months.

Home: M=20 years, 6 months, sd=7 years, 0 months.

Appendix 3. Treatment Effects; 2 Way ANOVA Between Groups; Main Effects for Group & Time Together with Interactions.

Scale Effect	df	f	p
Motor cluster	2	0.28	.76
Time	1	2.56	.13
GxT	2	0.55	.58
Social cluster	2	0.01	.99
Time	1	1.49	.24
GxT	2	0.10	.39
Personal cluster	2	0.04	.96
Time	1	1.46	.24
GxT	2	0.51	.61
Community cluster	2	0.04	.97
Time	1	15.03	.00
GxT	2	1.12	.35
INDEPENDENCE	2	0.03	.09
Time	1	3.06	.24
GxT	2	0.44	.64
Internal maladaptive	2	0.03	.98
Time	1	0.34	.56
GxT	2	0.94	.41
External maladaptive	2	0.36	.70
Time	1	0.36	.56
GxT	2	0.89	.43
Asocial maladaptive	2	0.55	.59
Time	1	0.74	.40
GxT	2	0.62	.55
MALADAPTIVE	2	0.41	.96
Time	1	0.42	.24
GxT	2	3.39	.05

Appendix 4. Structured Time Effects.

4a. Mean Total Structured Hours for One Month.

Crew: M=71.63 hours, sd=60.13 hours.
Bench: M=45.06 hours, sd=50.06 hours.
Home: M=4.81 hours, sd=5.82 hours.

4b. Mean Structured Leisure Hours for One Month.

Crew: M=4.13 hours, sd=5.16 hours.
Bench: M=5.06 hours, sd=3.51 hours.
Home: M=4.81 hours, sd=5.82 hours.

4c. Mean Structured Work Hours for One Month.

Crew: M=67.5 hours, sd=56.29 hours.
Bench: M=40.0 hours, sd=49.57 hours.
Home: M=0.0 hours, sd=0.0 hours.

4d. Pre-test 1 Way ANOVA Between Groups for Structured Work Hours Groups.

Scale	ss	df	f	p
Broad Independence	4062.84	22	.11	.15
Motor cluster	2128.59	21	.55	.23
Social cluster	6004.13	22	.26	.13
Personal cluster	4009.92	23	.16	.06
Community cluster	2994.91	21	.78	.19
General Maladaptive	429.06	22	.82	.08
Internal Maladaptive	225.06	21	.23	.31
External Maladaptive	202.51	20	.94	.41
Asocial Maladaptive	252.88	21	.36	.28

**Appendix 4e. Pre-test Mean S.I.B. Scores Following
Reallocation of Groups x Structured Working Hours; SD's
given in parentheses.**

Mean Pre-test S.I.B.	High Hrs	Low Hrs	No Hrs
Broad Independence	442.08 (15.64)	409.20 (38.64)	422.75 (28.08)
Motor Cluster	427.50 (15.72)	404.65 (34.66)	418.88 (18.19)
Social Cluster	441.25 (19.66)	401.70 (37.64)	421.63 (43.54)
Personal Cluster	473.75 (6.17)	441.05 (33.38)	453.19 (21.07)
Community Cluster	440.92 (18.73)	412.68 (33.99)	422.41 (28.07)
General Maladaptive	-12.50 (8.00)	-21.55 (9.35)	13.38 (8.35)
Asocial Index	-7.00 (11.78)	-15.15 (8.96)	11.25 (8.71)
External Index	-5.92 (9.99)	-11.60 (11.10)	5.56 (9.75)
Internal Index	-9.25 (7.15)	-16.70 (9.95)	15.68 (10.53)

4f. Distribution of Mean Age x Work Hour Groupings.

High: M=36 years, 8 months, sd=8 years, 3 months.

Low: M=35 years, 4 months, sd=6 years, 11 months.

No: M=41 years, 2 months, sd=7 years, 4 months.

4g. Distribution of Length of Institutionalisation x Work Hour Groupings.

High: M=15 years, 6 months, sd=8 years, 4 months.

Low: M=21 years, 4 months, sd=5 years, 7 months.

No: M=20 years, 6 months, sd=7 years, 1 month.